

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TEXARKANA DIVISION**

MAXELL, LTD.,

Plaintiff,

v.

APPLE INC.,

Defendant.

Civil Action No. _____

**COMPLAINT AND DEMAND
FOR JURY TRIAL**

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Maxell, Ltd. (“Maxell”), by and through its undersigned counsel, files this complaint under 35 U.S.C. § 271 for Patent Infringement against Defendant Apple Inc. (“Apple”) and further alleges as follows, upon actual knowledge with respect to itself and its own acts, and upon information and belief as to all other matters.

OVERVIEW

1. This is an action for patent infringement by Maxell. Founded in 1961 as Maxell Electric Industrial Co., Ltd., Maxell is a leading global manufacturer of information storage media products, including magnetic tapes, optical discs, and battery products such as lithium ion rechargeable micro batteries and alkaline dry batteries, and the company has over 50 years of experience producing industry-leading recordable media and energy products for both the consumer and the professional markets. Maxell is also a leading manufacturer of projectors and lenses and additionally sells various other devices, such as Bluetooth headsets, wireless charging solutions, etc.

2. Maxell has built up an international reputation for excellence and reliability, for pioneering the power supplies and digital recording for today's mobile and multi-media devices, and leading the electronics industry in the fields of storage media and batteries.

3. Since being one of the first companies to develop alkaline batteries and Blu Ray camcorder discs, Maxell has always assured its customers of industry leading product innovation and is one of the world's foremost suppliers of memory, power, audio, and visual goods.

4. As more fully described below, in 2009 Hitachi, Ltd. assigned much of its intellectual property to Hitachi Consumer Electronics Co., Ltd., along with a significant portion of its Consumer Business Group, including manufacturing and research and development capabilities. Then, in 2013, Hitachi Consumer Electronics Co., Ltd. assigned the intellectual property, including many of the patents in this case, along with the related manufacturing and research and development capabilities, to Hitachi Maxell, Ltd., which later assigned the assets to Maxell as a result of a reorganization and name change. This was an effort to align the intellectual property with the licensing, business development, research and development, and manufacturing efforts of Maxell, including in the mobile and mobile-media device market. Maxell continues to sell products in the mobile device market including wireless charging solutions, wireless flash drives, multimedia players, storage devices, and headphones. Maxell also maintains intellectual property related to televisions, computer products, tablets, digital cameras, and mobile phones. As a mobile technology developer and industry leader, and due to its historical and continuous investment in research and development, including in this District, Maxell owns a portfolio of patents related to such technologies and actively enforces its patents through licensing and/or litigation. Maxell is forced to bring this action against Apple as a result of Apple's knowing and ongoing infringement of Maxell's patents as further described herein.

5. Since at least June 2013, Apple has been aware of Maxell's patents and has had numerous meetings and interactions regarding its infringement of these patents. These meetings included Apple's representatives being provided with detailed information regarding Maxell's patents, the developed technology, and Apple's ongoing use of this patented technology. Through this process, Apple's representatives requested and received detailed explanations regarding Maxell's patents and allegations. Maxell believed that the parties could reach a mutually beneficial solution and to that end considered a potential business transaction and continued to answer multiple inquiries from Apple over the course of several years, including communicating with Apple as recently as late 2018. Apple elected, however, not to enter into an agreement and did not license Maxell's patents. Instead, Apple continued, and continues today, to make, use, sell and offer for sale Maxell's patented technology without license.

6. Since 2014, Maxell has had regular and continuous business in the Eastern District of Texas. As a result of such business dealings and hopes to expand those and other business dealings, a Maxell affiliate, Maxell Research and Development America, LLC ("MRDA"), was founded in Marshall, Texas. Maxell and MRDA have and continue to regularly meet and work to expand the research and development activities, business, and investments being made by Maxell, MRDA, and their business partners in this District to further the goals of these companies.

PARTIES

7. Plaintiff Maxell, Ltd. is a Japanese corporation with a registered place of business at 1 Koizumi, Oyamazaki, Oyamazaki-cho, Otokuni-gun, Kyoto, Japan.

8. On information and belief, Defendant Apple Inc. is a California corporation having a principal place of business located at One Apple Park Way Cupertino, California 95014

and regular and established places of business at 2601 Preston Road, Frisco, Texas, and 6121 West Park Boulevard, Plano, Texas, as well as other locations in Texas. Apple offers and sells its products and/or services, including those accused herein of infringement, to customers and potential customers located in Texas, including in the judicial Eastern District of Texas. Apple may be served with process through its registered agent for service in Texas: CT Corporation System, 1999 Bryant Street, Suite 900, Dallas, Texas 75201.

NATURE OF THE ACTION, JURISDICTION, AND VENUE

9. Maxell brings this action for patent infringement under the patent laws of the United States, 35 U.S.C. § 271 *et seq.*

10. This Court has subject matter jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1338(a) because the action arises under the patent laws of the United States.

11. This Court has personal jurisdiction over Apple. Apple conducts business and has committed acts of direct and indirect patent infringement in this District, the State of Texas, and elsewhere in the United States. Moreover, Apple is registered to do business in the State of Texas, has offices and facilities in the State of Texas and this District, and actively directs its activities to customers located in the State of Texas and this District.

12. Venue is proper in this District pursuant to 28 U.S.C. § 1400(b). Apple has regular and established places of business in this District, including Apple Stores located at 2601 Preston Road, Frisco, Texas and 6121 West Park Boulevard, Plano, Texas, is deemed to reside in this District, has committed acts of infringement described herein in this District, and has purposely transacted business involving the accused devices in this District.

13. Six of the patents accused of infringement herein, including U.S. Patent Nos. 6,748,317; 8,339,493; 7,116,438; 6,408,193; 6,928,306; and 6,329,794, were previously asserted in this District against Huawei Device Co., Ltd., Huawei Device USA, Inc., ZTE (USA), Inc., ZTE Corporation, and/or ASUSTeK Computer Inc. Further, U.S. Patent Nos. 6,580,999 and 6,430,498 are the parents of the previously asserted U.S. Patent No. 6,748,317 and include similar subject matter as the one the Court is familiar with. During the course of these lawsuits, this Court heard from the parties and their experts regarding the technology at issue in these patents, construed numerous claim terms, and even conducted a jury trial, during which all patents were found to be valid and willfully infringed. Accordingly, this Court has substantial knowledge of and concerning the majority of the patents asserted in this lawsuit. Judicial economy further supports venue in this District.

COUNT 1 - INFRINGEMENT OF U.S. PATENT NO. 6,748,317

14. Maxell incorporates paragraphs 1-13 above by reference.

15. U.S. Patent No. 6,748,317 (the “317 Patent,” attached hereto at Exhibit 1) duly issued on June 8, 2004 and is entitled *Portable terminal with the function of walking navigation*.

16. Maxell is the owner by assignment of the ’317 Patent and possesses all rights under the ’317 Patent, including the exclusive right to recover for past and future infringement.

17. Eight years before Apple released its first GPS-enabled iPhone and five years before Google launched its first Maps product, the inventors of the ’317 Patent were experimenting with ways to deliver navigation services to the small sized screens of cellular phones that were available in 1999. At the time of the priority date of the ’317 Patent, even the Internet hosted map applications were geared to stationary desktop computers, not to mobile phones. The inventors of the ’317 Patent recognized the benefits of delivering mapping services

to mobile phones and of supplementing those services with real-time location information from the phones themselves. '317 Patent, 1:10-30. The inventors were interested in specifically improving mapping services on small screen phones within the narrow field of walking navigation. *Id.* at 1:31-43. The inventors recognized that simply providing a map on the phone was not enough because the small, text-based displays of the phones were ill-equipped to display full maps or to enable meaningful user interactions. *Id.* at 2:17-36. The inventors also recognized that there was a need to provide a solution that did not require the enormous amount of cost required to download maps in real-time from a server linked to a computer network and to process this map information in a format that is readable on the small screens of the phones. *Id.* at 1:53-2:4. The inventors also recognized that a car navigation system from that time frame also did not provide a useful solution because it could not be used by a pedestrian to guide his/her walk due to the size and the lack of precision required to provide accurate route information to a pedestrian. *Id.* at 1:31-43.

18. It is against this backdrop that the inventors of the '317 Patent set about to solve the problem arising specifically in the realm of computer networks that—at that time—lacked the ability to provide accurate and precise route guidance information to pedestrians in a device that would be portable and that would not require the cost of constantly downloading maps and processing this data over a computer network in real-time. *Id.* at 2:51-61.

19. In order to solve this problem of computer, the inventors disclose a portable device with a particular combination of hardware components tailored for delivering mobile mapping services. The device includes a “[c]ellular antenna and … an infrared ray sensor” such as a “GSP [sic], PHS, or the like,” with which it can obtain “location information.” *Id.* at 5:66-6:2. The specification discloses that “location information” is “a latitude/longitude or coordinates

and an altitude.” *Id.* at 5:62-64. Moreover, the device includes “a compass, a gyro, and such a sensor as a clinometer,” with which it can obtain “direction information.” *Id.* at 6:2-12. The specification discloses that “direction information” is “the direction of the tip of the [device] or the orientation of the display screen.” *Id.* The ’317 Patent thus discloses a portable device with a specific combination of hardware that has a particular set of capabilities and in order to ensure that they did not preempt the concept of simply including a map on a computer, the inventors claimed a combination of “devices” within a “portable terminal with the function of walking navigation.” *See e.g.*, *id.* at 10:42-57 (claim 1). Further, each of the claimed “devices” recites a specific function that as a whole solve the problem of the prior art devices that could not provide accurate and precise navigation information to pedestrians. *Id.*

20. For example, claim 1 recites at least “a device for getting location information,” “a device for getting direction information denoting an orientation,” “an input device for inputting a destination,” and “a display” wherein the display specifically provides the claimed functionality of displaying positions of a “destination and a present place, and a relation of said direction and a direction from said present place to said destination.” *Id.* Further, the display also specifically provides the claimed functionality of changing the display “according to a change of said direction of said portable terminal orientation for walking navigation,” thus ensuring that the portable terminal can guide the pedestrian accurately in real-time in response to, for example, the pedestrian changing the direction he/she is walking. Independent claims 6 and 10 also recite similar combinations of hardware and also recite additional narrowing features (*e.g.*, “a device connected to a server”). *Id.* at 11:6-21 and 11:34-51. Similarly, at least dependent claims 2, 3, 5, 7, and 11 also provide additional narrowing features limiting the claims

to specific improvements in the field providing navigation information on portable terminals. *See id.* at 10:58-64, 11:3-5, 11:21-22, and 12:1-4.

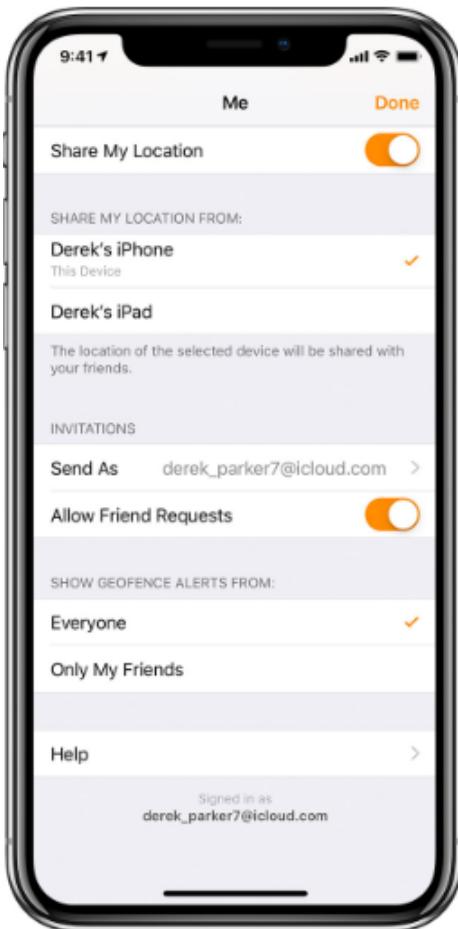
21. When considered as a whole the combination of hardware recited in the claims of the '317 Patent is directed to a specific novel and non-obvious portable terminal that includes specific functionality of providing guidance for walking navigation. Indeed, a jury in this jurisdiction made a determination that when considered as a whole, at least claims 1-3 of the '317 Patent are directed to a novel device and are not invalid over prior art.

22. Further, the patentability of the '317 Patent was challenged in IPR2018-00235, wherein the Patent Trial and Appeal Board was asked to consider the teachings of prior art (*e.g.*, U.S. Patent Nos. 5,781,150, 5,173,709, and 5,592,382, and Japanese Patent Application Publication No. H10-232992) in a challenge to the validity of claims 1-3, 6-8, 10, 15-17, and 20. In response, the Patent Trial and Appeal Board denied the petition, finding that the information presented does not "demonstrate a reasonable likelihood that Petitioner would prevail in showing that at least one of the challenged claims of the '317 Patent is unpatentable."

23. Apple has directly infringed one or more claims of the '317 Patent in this District and elsewhere in Texas, including at least claims 1-3, 5-7, and 10-11 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale and/or selling its telecommunications technology, including by way of example a product known as the iPhone XS.

24. The iPhone XS includes a screen for displaying information, at least a GPS chipset/cellular chipset/Wi-Fi chipset/iBeacon/compass/gyroscope for providing location and/or orientation information, "Maps" and "Find My Friends" software that allows users to access location information including the present location of the device and orientation of the device

and use such information to provide walking navigation information and/or share location. The iPhone XS further uses location servers to provide walking navigation information, route information, and/or to provide its position to additional devices in order to allow users to walk to a particular shared location. For example, the following excerpts from Apple's websites provide non-limiting examples of the iPhone XS infringing at least claims 1-3, 5-7, and 10-11 of the '317 Patent:



Use Find My Friends on multiple devices

You can use Find My Friends on any iPhone, iPad, iPod touch, or Apple Watch that you own. However, only one iOS device can send your location to your followers. You can choose which one to use in Find My Friends:

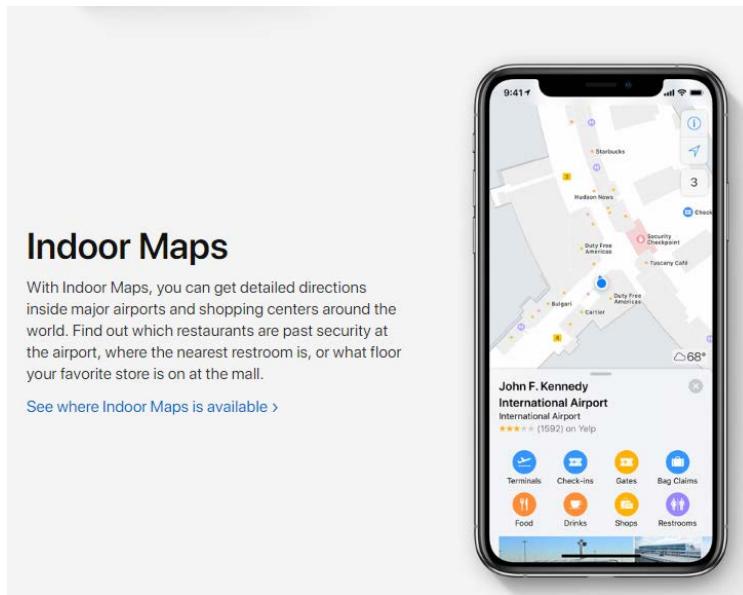
- On your iPhone or iPod touch, tap Me, then tap a device under Share My Location From.
- On your iPad, tap List > Me > Info, then tap a device under Share My Location From.

This choice only appears when you're currently signed in to Find My Friends on multiple devices.

See <https://support.apple.com/en-us/HT201493>

A new foundation for Maps.

Maps is being rebuilt from the ground up to better reflect the world around you. The new underlying map uses Apple data and features enhanced geographic context like **pedestrian paths** and parks, more detailed building outlines and parking lots, better road network coverage, and more. You'll also be able to get where you're going with improved routes, whether you're on the road or on foot. The new Maps is now available in Northern California and is coming soon to the rest of the United States.



See <https://www.apple.com/ios/maps/>

25. The foregoing features and capabilities of the iPhone XS, and Apple's description and/or demonstration thereof, including in user manuals and advertising, reflect Apple's direct

infringement by satisfying every element of at least claims 1-3, 5-7, and 10-11 of the '317 Patent, under 35 U.S.C. § 271(a).

26. On information and belief, Apple further infringes the '317 Patent through additional products utilizing the same or reasonably similar functionalities as described above with respect to the iPhone XS (collectively, "the '317 Accused Products"). The '317 Accused Products include all iOS devices including "Maps" and/or "Find My Friends" applications, for example, Apple iPhones (*e.g.*, iPhone XS (model no. A1920), iPhone XS Max (model no. A1921), iPhone XR (model no. A1984), iPhone X (model nos. A1865 and A1901), iPhone 8 Plus (model nos. A1864 and A1897), iPhone 8 (model nos. A1863 and A1905), iPhone 7 Plus (model nos. A1661 and A1784), iPhone 7 (model nos. A1660 and A1778), iPhone 6s Plus (model nos. A1634 and A1687), iPhone 6s (model nos. A1633 and A1688), iPhone 6 Plus (model nos. A1522 and A1524), iPhone 6 (model nos. A1549 and A1586), iPhone SE (model nos. A1723 and A1662), iPhone 5s (model nos. A1453 and A1533), and iPhone 5c (model nos. A1456 and A1532)) and Apple iPads with cellular functionality and/or Apple iPads with Wi-Fi and Indoor Maps (*e.g.*, iPad Air (model nos. A1474 and A1475), iPad mini 2 (model nos. A1489 and A1490), iPad Air 2 (model nos. A1566 and A1567), iPad mini 3 (model nos. A1599 and A1600), iPad mini 4 (model nos. A1538 and A1550), iPad Pro (10.5") (model nos. A1701 and A1709), iPad Pro (12.9") (model nos. A1584 and A1652), iPad Pro (9.7") (model nos. A1673, A1674, and A1675), iPad Pro (11") (model nos. A1980 and A2013), iPad (5th generation) (model nos. A1822 and A1823), iPad (6th generation) (model nos. A1893 and A1954), iPad Pro (12.9" 2nd generation) (model nos. A1670 and A1671), and iPad Pro (12.9" 3rd generation) (model nos. A1876, A2014, and A1895)). For example, each of these products also include a "Maps" application, a "Find My Friends" application, and/or "Location" services as advertised on

Apple's website. Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the '317 Accused Products are identified to describe Apple's infringement and in no way limit the discovery and infringement allegations against Apple concerning other devices that incorporate the same or reasonably similar functionalities.

27. Apple has indirectly infringed at least claims 1-3, 5-7, and 10-11 of the '317 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the '317 Accused Products. Apple's customers who purchase devices and components thereof and operate such devices and components in accordance with Apple's instructions directly infringe one or more claims of the '317 Patent in violation of 35 U.S.C. § 271. Apple instructs its customers through at least user guides or websites, such as those located at: https://support.apple.com/en_US/manuals or <https://www.apple.com/ios/maps/>. Apple is thereby liable for infringement of the '317 Patent pursuant to 35 U.S.C. § 271(b).

28. Apple has indirectly infringed at least claims 1-3, 5-7, and 10-11 of the '317 Patent, by, among other things, contributing to the direct infringement of others, including customers of the '317 Accused Products by making, offering to sell, or selling, in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '317 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

29. For example, the '317 Accused Products include hardware (e.g., GPS chip, cellular chip, Wi-Fi chip, gyroscope, compass, A12 processor) and/or software (e.g., "Maps" or "Find My Friends"). These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, such components are a material part of the invention and upon information and belief are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Apple is liable for infringement of the '317 Patent pursuant to 35 U.S.C. § 271(c).

30. Apple has been on notice of the '317 Patent since, at least, June 25, 2013. By the time of trial, Apple will thus have known and intended (since receiving such notice), that its continued actions would actively induce and contribute to actual infringement of at least claims 1-3, 5-7, and 10-11 of the '317 Patent.

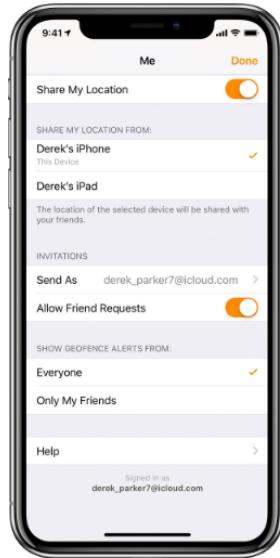
31. Apple undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the '317 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since, at least June 25, 2013, Apple has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the '317 Patent, and that the '317 Patent is valid. On information and belief, Apple could not reasonably, subjectively believe that its actions do not constitute infringement of the '317 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Apple has continued its infringing activities. As such, Apple willfully infringes the '317 Patent.

32. Maxell has been damaged by Apple's infringement of the '317 Patent.

COUNT 2 - INFRINGEMENT OF U.S. PATENT NO. 6,580,999

33. Maxell incorporates paragraphs 1-32 above by reference.
34. U.S. Patent No. 6,580,999 (the “’999 Patent,” attached hereto at Exhibit 2) duly issued on June 17, 2003 and is entitled *Portable terminal with the function of walking navigation.*
35. Maxell is the owner by assignment of the ’999 Patent and possesses all rights under the ’999 Patent, including the exclusive right to recover for past and future infringement.
36. The ’999 Patent is the parent of the ’317 Patent, and like claims of the ’317 Patent, claims of the ’999 Patent are also directed to a specific novel and non-obvious portable terminal that includes specific functionality of providing guidance for walking navigation. Further, claims 1-2 and 6 of the ’999 Patent even include a “device for getting the location information of another portable terminal” (’999 Patent, 10:44-45), thus specifically claiming a portable terminal that can receive a location from another portable terminal and providing in real-time route guidance information to a pedestrian so that the pedestrian can walk to the location of the other portable terminal after receiving the location.
37. Apple has directly infringed one or more claims of the ’999 Patent in this District and elsewhere in Texas, including at least claims 1-2 and 6 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale and/or selling its telecommunications technology, including by way of example a product known as the iPhone XS.
38. The iPhone XS includes a screen for displaying information, at least a GPS chipset/cellular chipset/Wi-Fi chipset/iBeacon/compass/gyroscope for providing location and/or orientation information, “Maps” and “Find My Friends” software that allows users to access location information including the present location of the device and orientation of the device

and use such information to provide walking navigation information and/or share location. The iPhone XS further uses location servers to provide walking navigation information, route information, and/or to provide its position to additional devices in order to allow users to walk to a particular shared location. For example, the following excerpts from Apple's websites provide non-limiting examples of the iPhone XS infringing at least claims 1-2 and 6 of the '999 Patent:



Use Find My Friends on multiple devices

You can use Find My Friends on any iPhone, iPad, iPod touch, or Apple Watch that you own. However, only one iOS device can send your location to your followers. You can choose which one to use in Find My Friends:

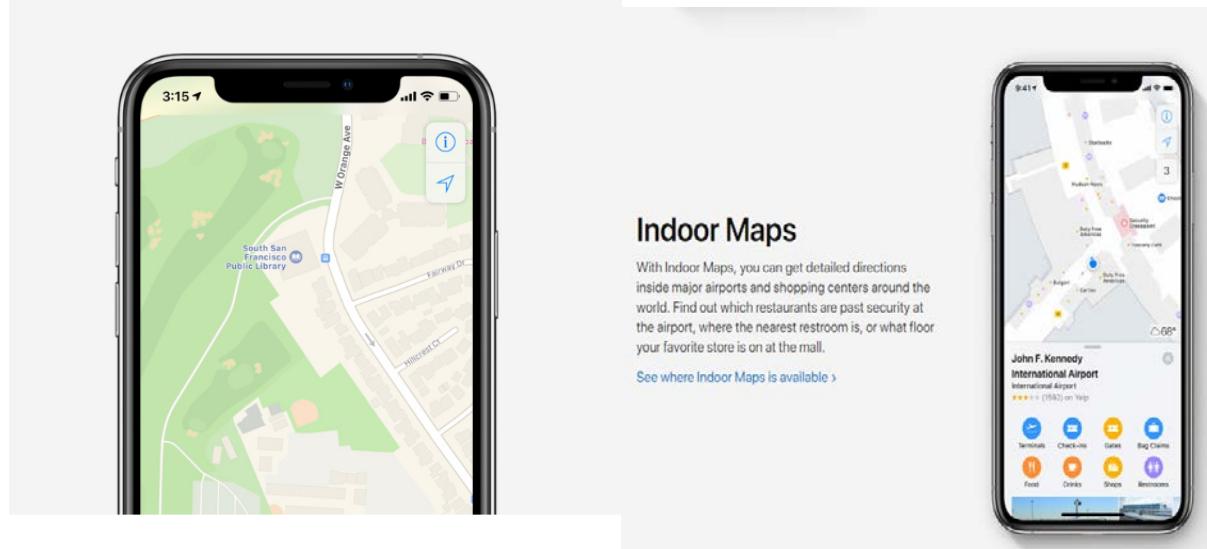
- On your iPhone or iPod touch, tap Me, then tap a device under Share My Location From.
- On your iPad, tap List > Me > Info, then tap a device under Share My Location From.

This choice only appears when you're currently signed in to Find My Friends on multiple devices.

See <https://support.apple.com/en-us/HT201493>

A new foundation for Maps.

Maps is being rebuilt from the ground up to better reflect the world around you. The new underlying map uses Apple data and features enhanced geographic context like **pedestrian paths** and parks, more detailed building outlines and parking lots, better road network coverage, and more. You'll also be able to get where you're going with improved routes, whether you're on the road or on foot. The new Maps is now available in Northern California and is coming soon to the rest of the United States.



See <https://www.apple.com/ios/maps/>

39. The foregoing features and capabilities of the iPhone XS, and Apple's description and/or demonstration thereof, including in user manuals and advertising, reflect Apple's direct infringement by satisfying every element of at least claims 1-2 and 6 of the '999 Patent, under 35 U.S.C. § 271(a).

40. On information and belief, Apple further infringes the '999 Patent through additional products utilizing the same or reasonably similar functionalities as described above with respect to the iPhone XS (collectively, "the '999 Accused Products"). The '999 Accused Products include all iOS devices including "Maps" and/or "Find My Friends" applications, for example, Apple iPhones (e.g., iPhone XS (model no. A1920), iPhone XS Max (model no. A1921), iPhone XR (model no. A1984), iPhone X (model nos. A1865 and A1901), iPhone 8 Plus (model nos. A1864 and A1897), iPhone 8 (model nos. A1863 and A1905), iPhone 7 Plus

(model nos. A1661 and A1784), iPhone 7 (model nos. A1660 and A1778), iPhone 6s Plus (model nos. A1634 and A1687), iPhone 6s (model nos. A1633 and A1688), iPhone 6 Plus (model nos. A1522 and A1524), iPhone 6 (model nos. A1549 and A1586), iPhone SE (model nos. A1723 and A1662), iPhone 5s (model nos. A1453 and A1533), and iPhone 5c (model nos. A1456 and A1532)) and Apple iPads with cellular functionality and/or Apple iPads with Wi-Fi and Indoor Maps (*e.g.*, iPad Air (model nos. A1474 and A1475), iPad mini 2 (model nos. A1489 and A1490), iPad Air 2 (model nos. A1566 and A1567), iPad mini 3 (model nos. A1599 and A1600), iPad mini 4 (model nos. A1538 and A1550), iPad Pro (10.5") (model nos. A1701 and A1709), iPad Pro (12.9") (model nos. A1584 and A1652), iPad Pro (9.7") (model nos. A1673, A1674, and A1675), iPad Pro (11") (model nos. A1980 and A2013), iPad (5th generation) (model nos. A1822 and A1823), iPad (6th generation) (model nos. A1893 and A1954), iPad Pro (12.9" 2nd generation) (model nos. A1670 and A1671), and iPad Pro (12.9" 3rd generation) (model nos. A1876, A2014, and A1895)). For example, each of these products also include a "Maps" application, a "Find My Friends" application, and/or "Location" services as advertised on Apple's website. Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the '999 Accused Products are identified to describe Apple's infringement and in no way limit the discovery and infringement allegations against Apple concerning other devices that incorporate the same or reasonably similar functionalities.

41. Apple has indirectly infringed at least claims 1-2 and 6 of the '999 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the '999 Accused Products. Apple's customers who purchase devices and components thereof and operate such devices and components in

accordance with Apple's instructions directly infringe one or more claims of the '999 Patent in violation of 35 U.S.C. § 271. Apple instructs its customers through at least user guides or websites, such as those located at: https://support.apple.com/en_US/manuals or <https://www.apple.com/ios/maps/>. Apple is thereby liable for infringement of the '999 Patent pursuant to 35 U.S.C. § 271(b).

42. Apple has indirectly infringed at least claims 1-2 and 6 of the '999 Patent, by, among other things, contributing to the direct infringement of others, including customers of the '999 Accused Products by making, offering to sell, or selling, in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '999 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

43. For example, the '999 Accused Products include hardware (*e.g.*, GPS chip, cellular chip, Wi-Fi chip, gyroscope, compass, A12 processor) and/or software (*e.g.*, “Maps” or “Find My Friends”). These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, such components are a material part of the invention and upon information and belief are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Apple is liable for infringement of the '999 Patent pursuant to 35 U.S.C. § 271(c).

44. Apple has been on notice of the '999 Patent since, at least, June 25, 2013. By the time of trial, Apple will thus have known and intended (since receiving such notice), that its continued actions would actively induce and contribute to actual infringement of at least claims 1-2 and 6 of the '999 Patent.

45. Apple undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the '999 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since, at least June 25, 2013, Apple has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the '999 Patent, and that the '999 Patent is valid. On information and belief, Apple could not reasonably, subjectively believe that its actions do not constitute infringement of the '999 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Apple has continued its infringing activities. As such, Apple willfully infringes the '999 Patent.

46. Maxell has been damaged by Apple's infringement of the '999 Patent.

COUNT 3 - INFRINGEMENT OF U.S. PATENT NO. 8,339,493

47. Maxell incorporates paragraphs 1-46 above by reference.

48. U.S. Patent No. 8,339,493 (the "'493 Patent," attached hereto at Exhibit 3) duly issued on December 25, 2012 and is entitled *Electric Camera*.

49. Maxell is the owner by assignment of the '493 Patent and possesses all rights under the '493 Patent, including the exclusive right to recover for past and future infringement.

50. The patentability of the '493 Patent was challenged in IPR2018-00236, wherein the Patent Trial and Appeal Board was asked to consider the teachings of prior art (e.g., U.S. Patent Nos. 5,493,335, 5,440,343, 5,497,192, 5,828,406, and 6,512,541) in a challenge to the validity of claims 5-6. In response, the Patent Trial and Appeal Board denied the petition, finding that the information presented does not "demonstrate a reasonable likelihood that Petitioner

would prevail in showing that at least one of the challenged claims of the '493 Patent is unpatentable."

51. Apple has directly infringed one or more claims of the '493 Patent in this District and elsewhere in Texas, including at least claims 5-6 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale and/or selling its telecommunications technology, including by way of example a product known as the iPhone XS.

52. The iPhone XS includes front and rear-facing cameras, each of which incorporates a light-receiving sensor or imaging sensor (*e.g.*, CMOS sensor) with an array of pixels arranged vertically and horizontally in a grid pattern. The iPhone XS can record an image in a static mode, for example recording photographs and snapshots in photo camera modes, and in a moving video mode, for example recording a video clip in video camera mode.

53. The iPhone XS further includes a processor (*e.g.*, A12 chip and/or ISP) that processes signals from one or more cameras and sensors to generate image signals for displaying on the iPhone XS's display, where the generated image can be manipulated in accordance with a select pixel arrangement and/or image stabilization correction factor using a portion of the pixel lines available. For example, the following excerpts from Apple's websites provide non-limiting examples of the iPhone XS infringing at least claims 5-6 of the '493 Patent by way of implementing a dual-camera system, CMOS sensors, and an image signal processor that arranges an array of pixels in a grid pattern and processes the pixels for each of a static image mode (*e.g.*, still pictures), monitoring mode (*e.g.*, preview of pictures/videos), and moving video mode (*e.g.*, videos):



Sensors, processors, algorithms, and you. An innovative dual-camera system integrates the ISP, the Neural Engine, and advanced algorithms to unlock new creative possibilities and help you capture incredible photos.



See <https://www.apple.com/iphone-xs/cameras/>

54. The foregoing features and capabilities of the iPhone XS and Apple's description and/or demonstration thereof, including in user manuals and advertising, reflect Apple's direct infringement by satisfying every element of at least claims 5-6 of the '493 Patent, under 35 U.S.C. § 271(a).

55. On information and belief, Apple further infringes the '493 Patent through additional products utilizing the same or reasonably similar functionalities as described above with respect to the iPhone XS (collectively, "the '493 Accused Products"). The '493 Accused Products include, for example, Apple iPhones (*e.g.*, iPhone XS (model no. A1920), iPhone XS Max (model no. A1921), iPhone XR (model no. A1984), iPhone X (model nos. A1865 and A1901), iPhone 8 Plus (model nos. A1864 and A1897), iPhone 8 (model nos. A1863 and A1905), iPhone 7 Plus (model nos. A1661 and A1784), iPhone 7 (model nos. A1660 and A1778), iPhone 6s Plus (model nos. A1634 and A1687), iPhone 6s (model nos. A1633 and A1688), iPhone 6 Plus (model nos. A1522 and A1524), iPhone 6 (model nos. A1549 and A1586), iPhone SE (model nos. A1723 and A1662), iPhone 5s (model nos. A1453 and A1533), and iPhone 5c (model nos. A1456 and A1532)); Apple iPads (*e.g.*, iPad Air (model nos. A1474 and A1475), iPad mini 2 (model nos. A1489 and A1490), iPad Air 2 (model nos. A1566 and A1567), iPad mini 3 (model nos. A1599 and A1600), iPad mini 4 (model nos. A1538 and A1550), iPad Pro (10.5") (model nos. A1701 and A1709), iPad Pro (12.9") (model nos. A1584 and A1652), iPad Pro (9.7") (model nos. A1673, A1674, and A1675), iPad Pro (11") (model nos. A1980 and A2013), iPad (5th generation) (model nos. A1822 and A1823), iPad (6th generation) (model nos. A1893 and A1954), iPad Pro (12.9" 2nd generation) (model nos. A1670 and A1671), and iPad Pro (12.9" 3rd generation) (model nos. A1876, A2014, and A1895)); and Apple iPod Touches (*e.g.*, iPod Touch 5th generation (model nos. A1509 and A1421) and iPod Touch

6th generation (model no. A1574)). For example, each of these products also include one or more cameras, image sensors (*e.g.*, CMOS), and/or image stabilization techniques as advertised on Apple’s website. Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the ’493 Accused Products are identified to describe Apple’s infringement and in no way limit the discovery and infringement allegations against Apple concerning other devices that incorporate the same or reasonably similar functionalities.

56. Apple has indirectly infringed at least claims 5-6 of the ’493 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the ’493 Accused Products. Apple’s customers who purchase devices and components thereof and operate such devices and components in accordance with Apple’s instructions directly infringe one or more claims of the ’493 Patent in violation of 35 U.S.C. § 271. Apple instructs its customers through at least user guides or websites, such as those located at: https://support.apple.com/en_US/manuals or <https://www.apple.com/iphone-xs/cameras/> or <https://www.apple.com/iphone/#dual-cameras> or <https://www.apple.com/iphone-xs/cameras>. Apple is thereby liable for infringement of the ’493 Patent pursuant to 35 U.S.C. § 271(b).

57. Apple has indirectly infringed at least claims 5-6 of the ’493 Patent, by, among other things, contributing to the direct infringement of others, including customers of the ’493 Accused Products by making, offering to sell, or selling, in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to

be especially made or especially adapted for use in infringement of the '493 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

58. For example, the '493 Accused Products include sensors in front and rear-facing cameras with an array of pixels arranged vertically and horizontally in a grid pattern. These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, such components are a material part of the invention and upon information and belief are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Apple is liable for infringement of the '493 Patent pursuant to 35 U.S.C. § 271(c).

59. Apple has been on notice of the '493 Patent since, at least, June 25, 2013. By the time of trial, Apple will thus have known and intended (since receiving such notice), that its continued actions would actively induce and contribute to actual infringement of at least claims 5-6 of the '493 Patent.

60. Apple undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the '493 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since, at least June 25, 2013, Apple has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the '493 Patent, and that the '493 Patent is valid. On information and belief, Apple could not reasonably, subjectively believe that its actions do not constitute infringement of the '493 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Apple has continued its infringing activities. As such, Apple willfully infringes the '493 Patent.

61. Maxell has been damaged by Apple's infringement of the '493 Patent.

COUNT 4 - INFRINGEMENT OF U.S. PATENT NO. 7,116,438

62. Maxell incorporates paragraphs 1-61 above by reference.

63. U.S. Patent No. 7,116,438 (the "'438 Patent," attached hereto at Exhibit 4) duly issued on October 3, 2006 and is entitled *Terminal for information processing*.

64. Maxell is the owner by assignment of the '438 Patent and possesses all rights under the '438 Patent, including the exclusive right to recover for past and future infringement.

65. Apple has directly infringed one or more claims of the '438 Patent in this District and elsewhere in Texas, including at least claims 1-3 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale and/or selling its telecommunications technology, including by way of example a product known as the iPhone XS.

66. The iPhone XS includes an input unit (such as the device's touch screen) for receiving input from a user in the form of hand gestures, screen touches, etc. Further, the iPhone XS includes a first short-distance communication unit (e.g., Bluetooth, NFC chipset, and/or Wi-Fi) for carrying out a short-distance communication with a display apparatus. The iPhone XS also includes a second communication unit (e.g., Bluetooth, Wi-Fi, and/or cellular network) for carrying out communication with a display device over a network. The iPhone XS further carries out an authentication process (e.g., authentication via AirDrop) for determining whether to allow usage of the display apparatus and carries out data exchange with the display apparatus if the authentication process is confirmed. If the authentication process is not confirmed, then the iPhone XS does not exchange data with the display apparatus. For example, the following

excerpts from Apple's websites provide non-limiting examples of the iPhone XS infringing at least claims 1-3 of the '438 Patent:

Use AirDrop on your iPhone, iPad, or iPod touch

With AirDrop, you can instantly share your photos, videos, documents, and more with other Apple devices that are nearby.



Use AirDrop to share and receive content, like photos and documents, with other Apple devices that are nearby.

Before you begin

Before you begin, check the following:

- Make sure that the person you're sending to is nearby and within Bluetooth and Wi-Fi range.
- Check that you and the person you're sending to have Wi-Fi and Bluetooth turned on. If either of you have Personal Hotspot on, turn it off.
- Check if the person you're sending to has their AirDrop set to receive from Contacts Only. If they do, and you're in their Contacts, they need to have your email address or mobile number in your contact card for AirDrop to work.
- If you're not in their Contacts, have them [set their AirDrop receiving setting to Everyone](#) in order to receive the file.

See <https://support.apple.com/en-us/HT204144>

67. The foregoing features and capabilities of the iPhone XS, and Apple's description and/or demonstration thereof, including in user manuals and advertising, reflect Apple's direct infringement by satisfying every element of at least claims 1-3 of the '438 Patent, under 35 U.S.C. § 271(a).

68. On information and belief, Apple further infringes the '438 Patent through additional products utilizing the same or reasonably similar functionalities as described above with respect to the iPhone XS (collectively, "the '438 Accused Products"). The '438 Accused Products include at least the Apple iPhones (*e.g.*, iPhone XS (model no. A1920), iPhone XS Max (model no. A1921), iPhone XR (model no. A1984), iPhone X (model nos. A1865 and A1901), iPhone 8 Plus (model nos. A1864 and A1897), iPhone 8 (model nos. A1863 and A1905), iPhone

7 Plus (model nos. A1661 and A1784), iPhone 7 (model nos. A1660 and A1778), iPhone 6s Plus (model nos. A1634 and A1687), iPhone 6s (model nos. A1633 and A1688), iPhone 6 Plus (model nos. A1522 and A1524), iPhone 6 (model nos. A1549 and A1586), iPhone SE (model nos. A1723 and A1662), iPhone 5s (model nos. A1453 and A1533), and iPhone 5c (model nos. A1456 and A1532)); Apple iPads (*e.g.*, iPad Air (model nos. A1474 and A1475), iPad mini 2 (model nos. A1489 and A1490), iPad Air 2 (model nos. A1566 and A1567), iPad mini 3 (model nos. A1599 and A1600), iPad mini 4 (model nos. A1538 and A1550), iPad Pro (10.5") (model nos. A1701 and A1709), iPad Pro (12.9") (model nos. A1584 and A1652), iPad Pro (9.7") (model nos. A1673, A1674, and A1675), iPad Pro (11") (model nos. A1980 and A2013), iPad (5th generation) (model nos. A1822 and A1823), iPad (6th generation) (model nos. A1893 and A1954), iPad Pro (12.9" 2nd generation) (model nos. A1670 and A1671), and iPad Pro (12.9" 3rd generation) (model nos. A1876, A2014, and A1895)); Apple iPod Touches (*e.g.*, iPod Touch 5th generation (model nos. A1509 and A1421) and iPod Touch 6th generation (model no. A1574)); Apple watches (*e.g.*, Series 4 (model nos. A1975, A1976, A1977, and A1978), Series 3 (model nos. A1860, A1861, A1858, and A1859), Series 2 (model nos. A1757, A1758, A1816, and A1817), Series 1 (model nos. A1802 and A1803), and 1st Generation (model nos. A1553 and A1554)); and Mac Products implementing AirDrop sold or offered for sale on or after February 2013 (*e.g.*, MacBook Pro, MacBook Air, iMac, Mac mini, Mac Pro, and iMac Pro as identified at <https://support.apple.com/en-us/HT203106>). For example, each of these products also include a short distance communication unit (*e.g.*, Bluetooth, NFC chipset, and/or Wi-Fi) and a second communication unit (*e.g.*, Bluetooth, Wi-Fi, and/or cellular network) for implementing AirDrop as advertised on Apple's website. Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of

doubt, the '438 Accused Products are identified to describe Apple's infringement and in no way limit the discovery and infringement allegations against Apple concerning other devices that incorporate the same or reasonably similar functionalities.

69. Apple has indirectly infringed at least claims 1-3 of the '438 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the '438 Accused Products. Apple's customers who purchase devices and components thereof and operate such devices and components in accordance with Apple's instructions directly infringe one or more claims of the '438 Patent in violation of 35 U.S.C. § 271. Apple instructs its customers through at least user guides or websites, such as those located at: https://support.apple.com/en_US/manuals or <https://support.apple.com/en-us/HT204144> or <https://support.apple.com/en-us/HT203106>. Apple is thereby liable for infringement of the '438 Patent pursuant to 35 U.S.C. § 271(b).

70. Apple has indirectly infringed at least claims 1-3 of the '438 Patent, by, among other things, contributing to the direct infringement of others, including customers of the '438 Accused Products by making, offering to sell, or selling, in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '438 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

71. For example, the '438 Accused Products include hardware (*e.g.*, Bluetooth, NFC chipset, and/or Wi-Fi) and software components (*e.g.*, AirDrop). These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, such components are a material part of the invention and upon information

and belief are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Apple is liable for infringement of the '438 Patent pursuant to 35 U.S.C. § 271(c).

72. Apple has been on notice of the '438 Patent since, at least, May 17, 2018. By the time of trial, Apple will thus have known and intended (since receiving such notice), that its continued actions would actively induce and contribute to actual infringement of at least claims 1-3 of the '438 Patent.

73. Apple undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the '438 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since, at least May 17, 2018, Apple has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the '438 Patent, and that the '438 Patent is valid. On information and belief, Apple could not reasonably, subjectively believe that its actions do not constitute infringement of the '438 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Apple has continued its infringing activities. As such, Apple willfully infringes the '438 Patent.

74. Maxell has been damaged by Apple's infringement of the '438 Patent.

COUNT 5 - INFRINGEMENT OF U.S. PATENT NO. 6,408,193

75. Maxell incorporates paragraphs 1-74 above by reference.

76. U.S. Patent No. 6,408,193 (the “193 Patent,” attached hereto at Exhibit 5) duly issued on June 18, 2002 and is entitled *Cellular telephone*.

77. Maxell is the owner by assignment of the '193 Patent and possesses all rights under the '193 Patent, including the exclusive right to recover for past and future infringement.

78. A jury in this jurisdiction has previously made a determination that when considered as a whole, at least claim 1 of the '193 Patent is directed to a novel and non-obvious device and is not invalid over prior art.

79. Further, the patentability of the '193 Patent was challenged in IPR2018-00237, wherein the Patent Trial and Appeal Board was asked to consider the teachings of prior art (e.g., U.S. Patent Nos. 5,267,262, 5,710,981, 5,056,109, 5,548,616, 5,452,473, 5,420,536, and 3,486,128, IS-95 standard, Japanese Patent Laid-open Nos. Hei-9-46152, Hei-04-277909, and Hei-06-252797, and "*A Review and Comparison of Pulse Width Modulation (PWM) Methods for Analog and Digital Input Switching Power Amplifier*") in a challenge to the validity of claims 1-7. In response, the Patent Trial and Appeal Board denied the petition, finding that the information presented does not "demonstrate a reasonable likelihood that Petitioner would prevail in showing that at least one of the challenged claims of the '193 Patent is unpatentable."

80. Apple has directly infringed one or more claims of the '193 Patent in this District and elsewhere in Texas, including at least claim 1 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale and/or selling its telecommunications technology, including by way of example a product known as the iPhone XS.

81. The iPhone XS is a mobile device capable of operation in numerous networks, including CDMA. The iPhone XS includes at least one antenna for receiving first communication signals (e.g., data signals transmitted on a downlink channel) and a transmitting

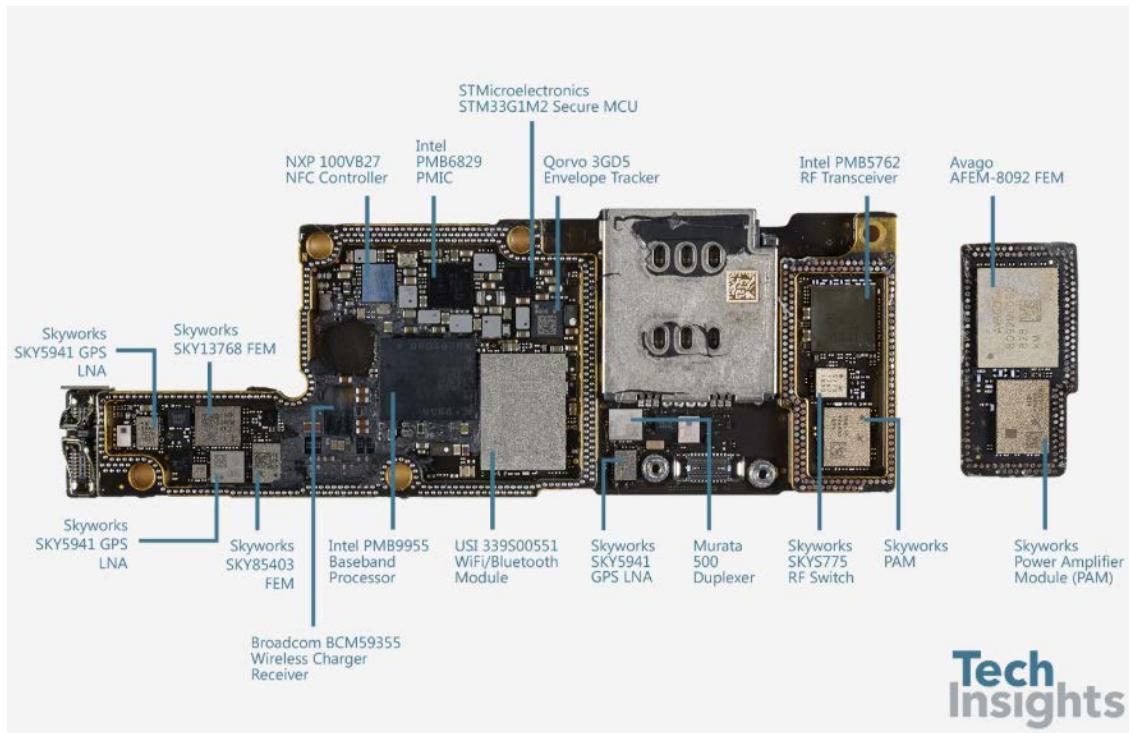
power control signal (*e.g.*, TPC transmitted on a downlink channel). It also transmits a second communication signal (*e.g.*, data on an uplink channel) to the cell-site station via the antenna.

82. The iPhone XS is observed to operate in FDD (Frequency Division Duplex), and incorporates a duplexer to allow full-duplex operation while sending and receiving at respective uplink and downlink frequencies on the same antenna or antennae and configured to convert communication signals to data, including voice signals.

83. The iPhone XS includes a receiver, *e.g.* a modem, connected to the antenna. The receiver includes an encoder/decoder and microphone and earpiece, and is configured to derive and output power control signal from the transmitting power control signal sent from the cell-site station. A controller is connected to the receiver and transmitter in the iPhone XS, which controls the amplitude of the transmission. For example, the following excerpt from Apple's websites and teardown showing the front end module components provide non-limiting examples of the iPhone XS infringing at least claim 1 of the '193 Patent:

Cellular and Wireless	Model A1920*	FDD-LTE (Bands 1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 17, 18, 19, 20, 25, 26, 29, 30, 32, 66, 71) TD-LTE (Bands 34, 38, 39, 40, 41, 46) CDMA EV-DO Rev. A (800, 1900 MHz) UMTS/HSPA+/DC-HSDPA (850, 900, 1700/2100, 1900, 2100 MHz) GSM/EDGE (850, 900, 1800, 1900 MHz)
	Model A1921*	FDD-LTE (Bands 1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 17, 18, 19, 20, 25, 26, 29, 30, 32, 66, 71) TD-LTE (Bands 34, 38, 39, 40, 41, 46) CDMA EV-DO Rev. A (800, 1900 MHz) UMTS/HSPA+/DC-HSDPA (850, 900, 1700/2100, 1900, 2100 MHz) GSM/EDGE (850, 900, 1800, 1900 MHz)
	All models	Gigabit-class LTE with 4x4 MIMO and LAA ⁴ 802.11ac Wi-Fi with 2x2 MIMO Bluetooth 5.0 wireless technology NFC with reader mode Express Cards with power reserve

See <https://www.apple.com/iphone-xs/specs/>



See <http://www.techinsights.com/about-techinsights/overview/blog/apple-iphone-xs-teardown/>

84. The foregoing features and capabilities of the iPhone XS, and Apple's description and/or demonstration thereof, including in user manuals and advertising, reflect Apple's direct infringement by satisfying every element of at least claim 1 of the '193 Patent, under 35 U.S.C. § 271(a).

85. On information and belief, Apple further infringes the '193 Patent through additional products utilizing the same or reasonably similar functionalities as described above with respect to the iPhone XS (collectively, "the '193 Accused Products"). The '193 Accused Products include, each of the Apple iPhones (*e.g.*, iPhone XS (model no. A1920), iPhone XS Max (model no. A1921), iPhone XR (model no. A1984), iPhone X (model nos. A1865 and A1901), iPhone 8 Plus (model nos. A1864 and A1897), iPhone 8 (model nos. A1863 and A1905), iPhone 7 Plus (model nos. A1661 and A1784), iPhone 7 (model nos. A1660 and A1778), iPhone 6s Plus (model nos. A1634 and A1687), iPhone 6s (model nos. A1633

and A1688), iPhone 6 Plus (model nos. A1522 and A1524), iPhone 6 (model nos. A1549 and A1586), iPhone SE (model nos. A1723 and A1662), iPhone 5s (model nos. A1453 and A1533), and iPhone 5c (model nos. A1456 and A1532)) and Apple iPads with cellular functionality (e.g., iPad Air (model no. A1475), iPad mini 2 (model no. 1490), iPad Air 2 (model no. A1567), iPad mini 3 (model no. A1600), iPad mini 4 (model no. A1550), iPad Pro (10.5") (model no. A1709), iPad Pro (12.9") (model no. A1652), iPad Pro (9.7") (model nos. A1674 and A1675), iPad Pro (11") (model no. A2013), iPad (5th generation) (model no. A1823), iPad (6th generation) (model no. A1954), iPad Pro (12.9" 2nd generation) (model no. A1671), and iPad Pro (12.9" 3rd generation) (model nos. A2014 and A1895)). For example, each of these products also include all necessary hardware and operating systems and work as described above with respect to the iPhone XS as advertised on Apple's website. Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the '193 Accused Products are identified to describe Apple's infringement and in no way limit the discovery and infringement allegations against Apple concerning other devices that incorporate the same or reasonably similar functionalities.

86. Apple has indirectly infringed at least claim 1 of the '193 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the '193 Accused Products. Apple's customers who purchase devices and components thereof and operate such devices and components in accordance with Apple's instructions directly infringe one or more claims of the '193 Patent in violation of 35 U.S.C. § 271. Apple instructs its customers through at least user guides or websites, such as those located at: https://support.apple.com/en_US/manuals or

<https://www.apple.com/iphone-xs/specs/>. Apple is thereby liable for infringement of the '193 Patent pursuant to 35 U.S.C. § 271(b).

87. Apple has indirectly infringed at least claim 1 of the '193 Patent, by, among other things, contributing to the direct infringement of others, including customers of the '193 Accused Products by making, offering to sell, or selling, in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '193 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

88. For example, the '193 Accused Products include a duplexer to allow full duplex operation while sending and receiving at respective uplink and downlink frequencies on the same antenna or antennae. Further, the '193 Accused Products include amplifiers and one or more processors for adjusting the transmission bias. These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, such components are a material part of the invention and upon information and belief are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Apple is liable for infringement of the '193 Patent pursuant to 35 U.S.C. § 271(c).

89. Apple has been on notice of the '193 Patent since, at least, May 17, 2018. By the time of trial, Apple will thus have known and intended (since receiving such notice), that its continued actions would actively induce and contribute to actual infringement of at least claim 1 of the '193 Patent.

90. Apple undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the '193 Patent, which has been duly issued by the

USPTO, and is presumed valid. For example, since, at least May 17, 2018, Apple has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the '193 Patent, and that the '193 Patent is valid. On information and belief, Apple could not reasonably, subjectively believe that its actions do not constitute infringement of the '193 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Apple has continued its infringing activities. As such, Apple willfully infringes the '193 Patent.

91. Maxell has been damaged by Apple's infringement of the '193 Patent.

COUNT 6 - INFRINGEMENT OF U.S. PATENT NO. 10,084,991

92. Maxell incorporates paragraphs 1-91 above by reference.

93. U.S. Patent No. 10,084,991 (the "'991 Patent," attached hereto at Exhibit 6) duly issued on September 25, 2018 and is entitled *Communication apparatus and method for receiving an inbound videophone call notice while displaying digital information on the display*.

94. Maxell is the owner by assignment of the '991 Patent and possesses all rights under the '991 Patent, including the exclusive right to recover for past and future infringement.

95. Apple has directly infringed one or more claims of the '991 Patent in this District and elsewhere in Texas, including at least claims 1-3 and 8-10 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale and/or selling its telecommunications technology, including by way of example a product known as the iPhone XS.

96. The iPhone XS is a communication apparatus for transmitting and receiving digital information to and from another device. Further, the iPhone XS includes a network

interface (e.g., Wi-Fi chipset or cellular chipset) to receive digital information from a server (e.g., content from iCloud or iTunes) and additional information from another device. Further, the iPhone XS includes a camera to generate video information and a display to display the video information and the information received from the server and the other device. Further, the iPhone XS includes a processor (e.g., A12 processor chipset or cellular chipset) that receives an inbound videophone call notice (e.g., FaceTime call) while displaying the digital information on the display, the processor pauses the displaying of the first digital information and renders the camera operative. Further, the iPhone XS stops display of information being received from the server to display video from the other communication device generated based on the videophone call. For example, the following excerpts from Apple's websites provide non-limiting examples of the iPhone XS infringing at least claims 1-3 and 8-10 of the '991 Patent:

Use FaceTime with your iPhone, iPad, or iPod touch

Learn how to use FaceTime to make video and audio calls from your iPhone, iPad, or iPod touch.



You can use FaceTime over Wi-Fi or over cellular on supported iOS devices². FaceTime isn't available or might not appear on devices purchased or used in Saudi Arabia, United Arab Emirates, and Pakistan. However, with iOS 11.3 and later, FaceTime is available on iPhone, iPad, and iPod touch in Saudi Arabia.

<https://support.apple.com/en-us/HT204380>

Download or stream movies and TV shows from the iTunes Store

You can buy or rent videos from the iTunes Store, then watch them on your iPhone, iPad, iPod touch, Mac, PC, or Apple TV.

Stream movies or TV shows

After you buy a movie or TV show from the iTunes Store, you can stream it on the device that you bought it on or on any of your other devices, as long as you're signed in with the same Apple ID.

Videos stream and download at the highest-quality version available based on the device that you're using, your device's settings, and your Internet speed. Learn more about how to [find and watch movies with 4K, HDR, Dolby Vision, or Dolby Atmos](#).

If you don't see a play button for a movie or TV show, tap or click  to download it. Some content can't be streamed over cellular data.

Switch to SD video

If you want to buy a lower-quality SD version instead, tap or click "Also available in SD" on the video's product page. Or on your Apple TV, go to Settings > Apps > iTunes Movies and TV Shows and turn on Limit Purchases and Rentals to SD, then purchase the video. The SD version won't have iTunes Extras, 4K, HDR, Dolby Vision, or Dolby Atmos formats, even if you play it later on a device that supports those features and formats.

See <https://support.apple.com/en-us/HT203375#stream>

97. The foregoing features and capabilities of the iPhone XS, and Apple's description and/or demonstration thereof, including in user manuals and advertising, reflect Apple's direct infringement by satisfying every element of at least claims 1-3 and 8-10 of the '991 Patent, under 35 U.S.C. § 271(a).

98. On information and belief, Apple further infringes the '991 Patent through additional products utilizing the same or reasonably similar functionalities as described above with respect to the iPhone XS (collectively, "the '991 Accused Products"). The '991 Accused Products include, each of the Apple iPhones (e.g., iPhone XS (model no. A1920), iPhone XS Max (model no. A1921), iPhone XR (model no. A1984), iPhone X (model nos. A1865 and

A1901), iPhone 8 Plus (model nos. A1864 and A1897), iPhone 8 (model nos. A1863 and A1905), iPhone 7 Plus (model nos. A1661 and A1784), iPhone 7 (model nos. A1660 and A1778), iPhone 6s Plus (model nos. A1634 and A1687), iPhone 6s (model nos. A1633 and A1688), iPhone 6 Plus (model nos. A1522 and A1524), iPhone 6 (model nos. A1549 and A1586), iPhone SE (model nos. A1723 and A1662), iPhone 5s (model nos. A1453 and A1533), and iPhone 5c (model nos. A1456 and A1532)); Apple iPads (*e.g.*, iPad Air (model nos. A1474 and A1475), iPad mini 2 (model nos. A1489 and A1490), iPad Air 2 (model nos. A1566 and A1567), iPad mini 3 (model nos. A1599 and A1600), iPad mini 4 (model nos. A1538 and A1550), iPad Pro (10.5") (model nos. A1701 and A1709), iPad Pro (12.9") (model nos. A1584 and A1652), iPad Pro (9.7") (model nos. A1673, A1674, and A1675), iPad Pro (11") (model nos. A1980 and A2013), iPad (5th generation) (model nos. A1822 and A1823), iPad (6th generation) (model nos. A1893 and A1954), iPad Pro (12.9" 2nd generation) (model nos. A1670 and A1671), and iPad Pro (12.9" 3rd generation) (model nos. A1876, A2014, and A1895)); Apple iPod Touches (*e.g.*, iPod Touch 5th generation (model nos. A1509 and A1421) and iPod Touch 6th generation (model no. A1574); and MacBook products with FaceTime functionality (*e.g.*, MacBook (model nos. 8,1; 9,1; and 10,1), MacBook Air (model nos. 6,1; 6,2; 7,1; 7,2; and 8,1), and MacBook Pro (model nos. 10,1; 10,2; 11,1; 11,2; 11,3; 11,4; 11,5; 12,1; 13,1; 13,2; 13,3; 14,1; 14,2; 15,1; and 15,3)). For example, each of these products also include hardware (Wi-Fi chipset, cellular chipset, A12 processor, camera) and software (FaceTime application) as advertised on Apple's website. Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the '991 Accused Products are identified to describe Apple's infringement and in no way limit the

discovery and infringement allegations against Apple concerning other devices that incorporate the same or reasonably similar functionalities.

99. Apple has indirectly infringed at least claims 1-3 and 8-10 of the '991 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the '991 Accused Products. Apple's customers who purchase devices and components thereof and operate such devices and components in accordance with Apple's instructions directly infringe one or more claims of the '991 Patent in violation of 35 U.S.C. § 271. Apple instructs its customers through at least user guides or websites, such as those located at: https://support.apple.com/en_US/manuals or <https://support.apple.com/en-us/HT204380> or <https://support.apple.com/en-us/HT203375#stream>. Apple is thereby liable for infringement of the '991 Patent pursuant to 35 U.S.C. § 271(b).

100. Apple has indirectly infringed at least claims 1-3 and 8-10 of the '991 Patent, by, among other things, contributing to the direct infringement of others, including customers of the '991 Accused Products by making, offering to sell, or selling, in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '991 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

101. For example, the '991 Accused Products include hardware (Wi-Fi chipset, cellular chipset, A12 processor, camera) and software (FaceTime application). These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, such components are a material part of the invention and upon

information and belief are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Apple is liable for infringement of the '991 Patent pursuant to 35 U.S.C. § 271(c).

102. Apple has been on notice of the '991 Patent since, at least, October 9, 2018. By the time of trial, Apple will thus have known and intended (since receiving such notice), that its continued actions would actively induce and contribute to actual infringement of at least claims 1-3 and 8-10 of the '991 Patent.

103. Apple undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the '991 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since, at least October 9, 2018, Apple has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the '991 Patent, and that the '991 Patent is valid. On information and belief, Apple could not reasonably, subjectively believe that its actions do not constitute infringement of the '991 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Apple has continued its infringing activities. As such, Apple willfully infringes the '991 Patent.

104. Maxell has been damaged by Apple's infringement of the '991 Patent.

COUNT 7 - INFRINGEMENT OF U.S. PATENT NO. 6,928,306

105. Maxell incorporates paragraphs 1-104 above by reference.

106. U.S. Patent No. 6,928,306 (the “306 Patent,” attached hereto at Exhibit 7) duly issued on August 9, 2005 and is entitled *Portable mobile unit*.

107. Maxell is the owner by assignment of the '306 Patent and possesses all rights under the '306 Patent, including the exclusive right to recover for past and future infringement.

108. Apple has directly infringed one or more claims of the '306 Patent in this District and elsewhere in Texas, including at least claims 2, 5-6, and 13-15 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale and/or selling its telecommunications technology, including by way of example a product known as the iPhone XS.

109. The iPhone XS is a portable mobile unit capable of alerting on incoming of a signal by a ringing sound (*e.g.*, alert for incoming call). Further, the iPhone XS includes a ringing sound generator having a plurality of sound sources (*e.g.*, a speaker and/or processor generating a ringtone and or announcing caller via Siri). Further, the iPhone XS includes a controller (*e.g.*, A12 chip) for controlling operations to generate the ringing sound using at least two of said sound sources when the signal comes in. Further, the iPhone XS includes a real time clock and/or timer to control the ringing sound based on a particular preset time (*e.g.*, “Do Not Disturb mode”). For example, the following excerpts and screenshots provide non-limiting examples of the iPhone XS infringing at least claims 2, 5-6, and 13-15 of the '306 Patent:

Use Do Not Disturb on your iPhone, iPad, and iPod touch

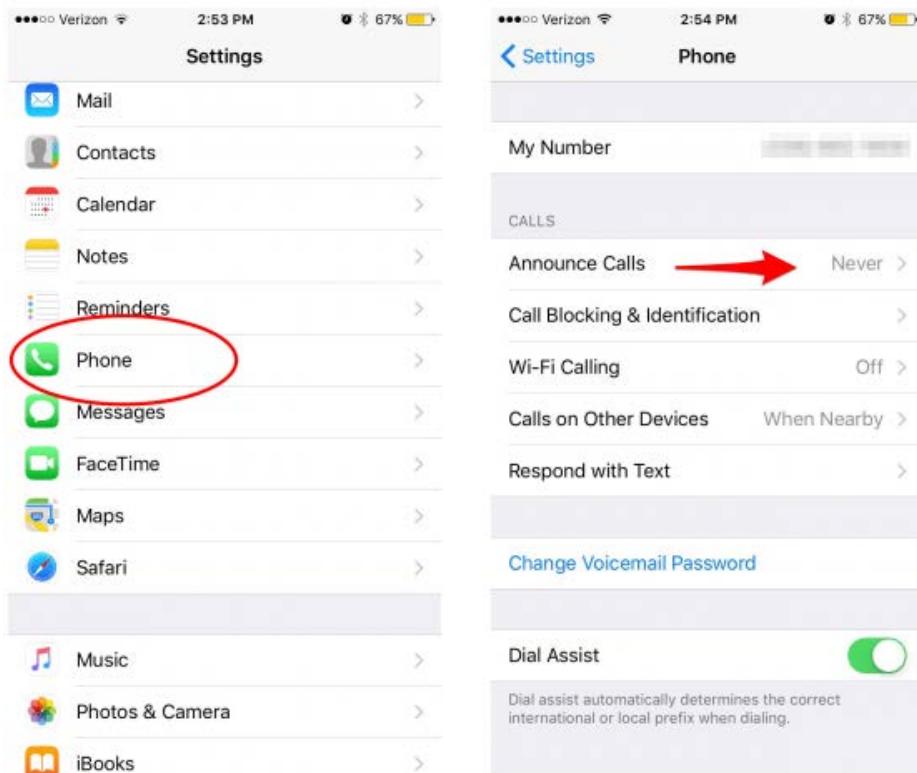
With Do Not Disturb, you can silence calls, alerts, and notifications that you get while your device is locked. You can also schedule Do Not Disturb and allow calls from certain people.

Turn Do Not Disturb on or off

When Do Not Disturb is on, you see a crescent moon  in the status bar. There are two ways to turn Do Not Disturb on or off:



See <https://support.apple.com/en-us/HT204321>



See “Settings” in the iPhone XS

110. The foregoing features and capabilities of the iPhone XS, and Apple's description and/or demonstration thereof, including in user manuals and advertising, reflect Apple's direct infringement by satisfying every element of at least claims 2, 5-6, and 13-15 of the '306 Patent, under 35 U.S.C. § 271(a).

111. On information and belief, Apple further infringes the '306 Patent through additional products utilizing the same or reasonably similar functionalities as described above with respect to the iPhone XS (collectively, "the '306 Accused Products"). The '306 Accused Products include, for example, Apple iPhones (*e.g.*, iPhone XS (model no. A1920), iPhone XS Max (model no. A1921), iPhone XR (model no. A1984), iPhone X (model nos. A1865 and A1901), iPhone 8 Plus (model nos. A1864 and A1897), iPhone 8 (model nos. A1863 and A1905), iPhone 7 Plus (model nos. A1661 and A1784), iPhone 7 (model nos. A1660 and A1778), iPhone 6s Plus (model nos. A1634 and A1687), iPhone 6s (model nos. A1633 and A1688), iPhone 6 Plus (model nos. A1522 and A1524), iPhone 6 (model nos. A1549 and A1586), iPhone SE (model nos. A1723 and A1662), iPhone 5s (model nos. A1453 and A1533), and iPhone 5c (model nos. A1456 and A1532)); Apple iPads (*e.g.*, iPad Air (model nos. A1474 and A1475), iPad mini 2 (model nos. A1489 and A1490), iPad Air 2 (model nos. A1566 and A1567), iPad mini 3 (model nos. A1599 and A1600), iPad mini 4 (model nos. A1538 and A1550), iPad Pro (10.5") (model nos. A1701 and A1709), iPad Pro (12.9") (model nos. A1584 and A1652), iPad Pro (9.7") (model nos. A1673, A1674, and A1675), iPad Pro (11") (model nos. A1980 and A2013), iPad (5th generation) (model nos. A1822 and A1823), iPad (6th generation) (model nos. A1893 and A1954), iPad Pro (12.9" 2nd generation) (model nos. A1670 and A1671), and iPad Pro (12.9" 3rd generation) (model nos. A1876, A2014, and A1895)); and Apple iPod Touches (*e.g.*, iPod Touch 5th generation (model nos. A1509 and A1421) and iPod Touch

6th generation (model no. A1574)). For example, each of these products also include hardware and/or software to implement Siri, generate alerts, and/or implement “Do Not Disturb” mode as advertised on Apple’s website. *See* <https://support.apple.com/en-us/HT204321> and <https://www.apple.com/siri/>. Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the ’306 Accused Products are identified to describe Apple’s infringement and in no way limit the discovery and infringement allegations against Apple concerning other devices that incorporate the same or reasonably similar functionalities.

112. Apple has indirectly infringed at least claims 2, 5-6, and 13-15 of the ’306 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the ’306 Accused Products. Apple’s customers who purchase devices and components thereof and operate such devices and components in accordance with Apple’s instructions directly infringe one or more claims of the ’306 Patent in violation of 35 U.S.C. § 271. Apple instructs its customers through at least user guides or websites, such as those located at: https://support.apple.com/en_US/manuals or <https://support.apple.com/en-us/HT204321> or <https://www.apple.com/siri/>. Apple is thereby liable for infringement of the ’306 Patent pursuant to 35 U.S.C. § 271(b).

113. Apple has indirectly infringed at least claims 2, 5-6, and 13-15 of the ’306 Patent, by, among other things, contributing to the direct infringement of others, including customers of the ’306 Accused Products by making, offering to sell, or selling, in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the

same to be especially made or especially adapted for use in infringement of the '306 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

114. For example, the '306 Accused Products include a speaker, processor, and/or software to implement Siri announce caller and “Do Not Disturb” modes. These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, such components are a material part of the invention and upon information and belief are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Apple is liable for infringement of the '306 Patent pursuant to 35 U.S.C. § 271(c).

115. Apple has been on notice of the '306 Patent since, at least, May 17, 2018. By the time of trial, Apple will thus have known and intended (since receiving such notice), that its continued actions would actively induce and contribute to actual infringement of at least claims 2, 5-6, and 13-15 of the '306 Patent.

116. Apple undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the '306 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since, at least May 17, 2018, Apple has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the '306 Patent, and that the '306 Patent is valid. On information and belief, Apple could not reasonably, subjectively believe that its actions do not constitute infringement of the '306 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Apple has continued its infringing activities. As such, Apple willfully infringes the '306 Patent.

117. Maxell has been damaged by Apple's infringement of the '306 Patent.

COUNT 8 - INFRINGEMENT OF U.S. PATENT NO. 6,329,794

118. Maxell incorporates paragraphs 1-117 above by reference.

119. U.S. Patent No. 6,329,794 (the "'794 Patent," attached hereto at Exhibit 8) duly issued on December 11, 2001 and is entitled *Information processing device and method for controlling power consumption thereof*.

120. Maxell is the owner by assignment of the '794 Patent and possesses all rights under the '794 Patent, including the exclusive right to recover for past and future infringement.

121. At the time of the invention of the '794 Patent, conventional devices had limited power management techniques available. '794 Patent, 1:5-45. To conserve power, they either reduced power consumption of all devices as much as possible or restricted power to function devices that were not being used. *Id.* at 1:12-22. The '794 Patent provided a new power management solution and taught assigning different priorities to independent function devices of an information processing device and controlling the supply of power to those function devices based on their priority and the remaining battery capacity. *Id.* at 1:49-67. The '794 Patent disclosed powering down lower-priority function devices (such as, in one embodiment, a videophone function) before other, higher-priority function devices (such as, in one embodiment, audio communication). *Id.* at 4:36-62. This priority-based power management provided a mechanism for users to continue using desired functions longer by reducing power to less important functions at an earlier stage of battery depletion. *Id.* at 1:55-67.

122. As a part of its solution, the '794 Patent teaches at least the use of a battery capacity detector and a controller able to send independent power consumption reduction instructions to low-priority function devices structured to receive these instructions when the

battery decreases below certain thresholds. *Id.* at 1:55-67. The '794 Patent provided a practical and desirable concrete way of prioritizing certain function devices within the information processing device by correlating their priority of usage to various thresholds of remaining battery capacity. When the battery capacity decreased past a given threshold, the function devices assigned to that priority group would receive power reduction instructions. The '794 Patent is directed to a specific improvement of the power management capabilities of an information processing device and ties this improvement to the additional inventive concept of tying specific threshold battery levels to power reduction instructions that are sent to prioritized function devices.

123. The '794 Patent is directed to power management within the computer system itself, and specifically teaches assigning different priorities to the function devices of an information processing device depending specifically on remaining battery levels. The '794 Patent teaches and claims assigning at least two priority rankings to function devices within the computer, correlating each priority ranking to a threshold remaining battery level, and sending power consumption reduction instructions to all function devices based on a priority rank when the battery level decreases below the correlated threshold. '794 Patent at claim 1. The invention of the '794 Patent allows a device to operate in a more efficient manner and improves the computer system itself, rather than using a conventional computer system as a conduit to accomplish its objectives.

124. Further, the patentability of the '794 Patent was challenged in IPR2018-00241, wherein the Patent Trial and Appeal Board was asked to consider the teachings of prior art (*e.g.*, U.S. Patent Nos. 6,031,999, 5,560,022, 6,345,180, 6,360,327, and Advanced Configuration and Power Interface Specification) in a challenge to the validity of claims 1-3 and 5-14. In response,

the Patent Trial and Appeal Board denied the petition, finding that the information presented does not “demonstrate a reasonable likelihood that Petitioner would prevail in showing that at least one of the challenged claims of the ’794 Patent is unpatentable.”

125. Apple has directly infringed one or more claims of the ’794 Patent in this District and elsewhere in Texas, including at least claims 1-3 and 9-11 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale and/or selling its telecommunications technology, including by way of example a product known as the iPhone XS.

126. The iPhone XS is an information processing device that incorporates multiple component devices performing different functions, with each component having a corresponding power supplied by a battery. For example, the iPhone XS includes a display with a display power supply. The iPhone XS incorporates a processor or co-processor programmed with software, in combination with the electronic components of the iPhone XS, to monitor the battery capacity of the battery as components of the device consume the power supplied from the battery. Under an operating condition when the battery is at a first reference level, a processor or co-processor of the iPhone XS is programmed to optimize power consumption, including shutting off or reducing the power consumption of components or applications that have a lower usage priority as predefined by the software or selected by the user, where different components are shut down based on one or more defined battery capacity levels and usage priority. For example, the following excerpts provide non-limiting examples of the iPhone XS infringing at least claims 1-3 and 9-11 of the ’794 Patent:

Use Low Power Mode to save battery life on your iPhone

Low Power Mode reduces the amount of power that your iPhone uses when the battery gets low.

To turn Low Power Mode on or off, go to Settings > Battery. You can also turn Low Power Mode on and off from Control Center. Go to Settings > Control Center > Customize Controls, then select Low Power Mode to add it to Control Center.

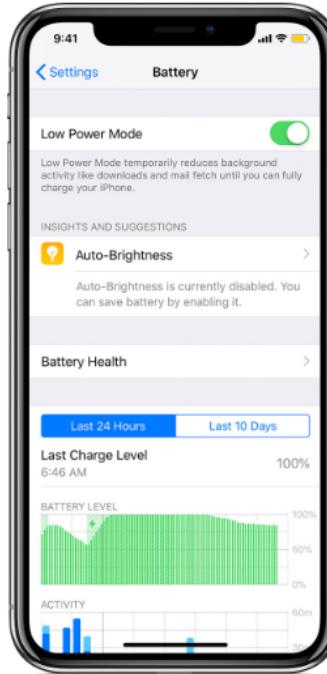
When Low Power Mode is on, your iPhone will last longer before you need to charge it, but some features might take longer to update or complete. Also, some tasks might not work until you turn off Low Power Mode, or until you charge your iPhone to 80% or higher.

Low Power Mode reduces or affects these features:

- Email fetch
- "Hey Siri"
- Background app refresh
- Automatic downloads
- Some visual effects
- Auto-Lock (defaults to 30 seconds)
- iCloud Photo Library (temporarily paused)

When Low Power Mode is on, the battery in the status bar will be yellow. You'll see  and the battery percentage. After you charge your iPhone to 80% or higher, Low Power Mode automatically turns off.

Low Power Mode is available only on iPhone.



See <https://support.apple.com/en-us/HT205234>

Use Low Power Mode

If you want to extend the battery life on your iPhone, turn on Low Power Mode. This reduces power consumption until you turn it off or charge your iPhone to 80%. When Low Power Mode is on, certain settings and features like app updates, downloads of new TV shows or podcast episodes, mail fetch, and some visual effects such as True Tone are reduced or disabled.

Learn more [about Low Power Mode](#).

See <https://support.apple.com/en-us/HT201264>

127. The foregoing features and capabilities of the iPhone XS, and Apple's description and/or demonstration thereof, including in user manuals and advertising, reflect Apple's direct infringement by satisfying every element of at least claims 1-3 and 9-11 of the '794 Patent, under 35 U.S.C. § 271(a).

128. On information and belief, Apple further infringes the '794 Patent through additional products utilizing the same or reasonably similar functionalities as described above with respect to the iPhone XS (collectively, "the '794 Accused Products"). The '794 Accused Products include, by way of examples, the Apple iPhones (*e.g.*, iPhone XS (model no. A1920), iPhone XS Max (model no. A1921), iPhone XR (model no. A1984), iPhone X (model nos. A1865 and A1901), iPhone 8 Plus (model nos. A1864 and A1897), iPhone 8 (model nos. A1863 and A1905), iPhone 7 Plus (model nos. A1661 and A1784), iPhone 7 (model nos. A1660 and A1778), iPhone 6s Plus (model nos. A1634 and A1687), iPhone 6s (model nos. A1633 and A1688), iPhone 6 Plus (model nos. A1522 and A1524), iPhone 6 (model nos. A1549 and A1586), iPhone SE (model nos. A1723 and A1662), iPhone 5s (model nos. A1453 and A1533), and iPhone 5c (model nos. A1456 and A1532)); Apple iPads (*e.g.*, iPad Air (model nos. A1474 and A1475), iPad mini 2 (model nos. A1489 and A1490), iPad Air 2 (model nos. A1566 and A1567), iPad mini 3 (model nos. A1599 and A1600), iPad mini 4 (model nos. A1538 and A1550), iPad Pro (10.5") (model nos. A1701 and A1709), iPad Pro (12.9") (model nos. A1584 and A1652), iPad Pro (9.7") (model nos. A1673, A1674, and A1675), iPad Pro (11") (model nos. A1980 and A2013), iPad (5th generation) (model nos. A1822 and A1823), iPad (6th generation) (model nos. A1893 and A1954), iPad Pro (12.9" 2nd generation) (model nos. A1670 and A1671), and iPad Pro (12.9" 3rd generation) (model nos. A1876, A2014, and A1895)); Apple iPod Touches (*e.g.*, iPod Touch 5th generation (model nos. A1509 and A1421) and iPod Touch 6th generation (model no. A1574)); and Apple watches (*e.g.*, Series 4 (model nos. A1975, A1976, A1977, and A1978), Series 3 (model nos. A1860, A1861, A1858, and A1859), Series 2 (model nos. A1757, A1758, A1816, and A1817), Series 1 (model nos. A1802 and A1803), and 1st Generation (model nos. A1553 and A1554)). For example, each of these products also include an

Axx series chip and battery for managing/prioritizing power usage and implementing a low power mode as advertised on Apple's website. *See e.g.*, <https://support.apple.com/en-us/HT205234> or <https://support.apple.com/en-us/HT201264>. Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the '794 Accused Products are identified to describe Apple's infringement and in no way limit the discovery and infringement allegations against Apple concerning other devices that incorporate the same or reasonably similar functionalities.

129. Apple has indirectly infringed at least claims 1-3 and 9-11 of the '794 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the '794 Accused Products. Apple's customers who purchase devices and components thereof and operate such devices and components in accordance with Apple's instructions directly infringe one or more claims of the '794 Patent in violation of 35 U.S.C. § 271. Apple instructs its customers through at least user guides or websites, such as those located at: https://support.apple.com/en_US/manuals or <https://support.apple.com/en-us/HT205234> or <https://support.apple.com/en-us/HT201264>. Apple is thereby liable for infringement of the '794 Patent pursuant to 35 U.S.C. § 271(b).

130. Apple has indirectly infringed at least claims 1-3 and 9-11 of the '794 Patent, by, among other things, contributing to the direct infringement of others, including customers of the '794 Accused Products by making, offering to sell, or selling, in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '794 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

131. For example, the '794 Accused Products include a battery and processor for managing battery usage. These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, such components are a material part of the invention and upon information and belief are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Apple is liable for infringement of the '794 Patent pursuant to 35 U.S.C. § 271(c).

132. Apple has been on notice of the '794 Patent since, at least, May 17, 2018. By the time of trial, Apple will thus have known and intended (since receiving such notice), that its continued actions would actively induce and contribute to actual infringement of at least claims 1-3 and 9-11 of the '794 Patent.

133. Apple undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the '794 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since, at least May 17, 2018, Apple has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the '794 Patent, and that the '794 Patent is valid. On information and belief, Apple could not reasonably, subjectively believe that its actions do not constitute infringement of the '794 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Apple has continued its infringing activities. As such, Apple willfully infringes the '794 Patent.

134. Maxell has been damaged by Apple's infringement of the '794 Patent.

COUNT 9 - INFRINGEMENT OF U.S. PATENT NO. 10,212,586

135. Maxell incorporates paragraphs 1-134 above by reference.

136. U.S. Patent No. 10,212,586 (the “‘586 Patent,” attached hereto at Exhibit 9) duly issued on February 19, 2019 and is entitled *Mobile terminal and control method thereof*.

137. Maxell is the owner by assignment of the ‘586 Patent and possesses all rights under the ‘586 Patent, including the exclusive right to recover for past and future infringement.

138. Apple has directly infringed one or more claims of the ‘586 Patent in this District and elsewhere in Texas, including at least claims 1, 7, 9, 14, 16, and 19 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale and/or selling its telecommunications technology, including by way of example a product known as the iPhone XS.

139. The iPhone XS is a mobile terminal configured to switch between an unlocked state and a locked state. Further, the iPhone XS includes a transceiver which performs short-range wireless communication (e.g., Bluetooth, NFC, and/or Wi-Fi). The iPhone XS also includes a memory which previously stores information about another mobile terminal (e.g., Apple Watch). The iPhone XS also includes a controller (e.g., Axx chipset) which switches the mobile terminal between an unlocked state and a locked state based on an authentication input (e.g., password) to the mobile terminal. Further, the iPhone XS transmits information to the another mobile terminal (e.g., Apple Watch) for switching a state of the another mobile terminal from a locked state to an unlocked state when certain conditions are met including that the mobile terminal is in a locked state, the another mobile terminal is in a locked state, and the another mobile terminal is within communication range of the short-range wireless communications of the transceiver. For example, the following excerpts provide non-limiting examples of the iPhone XS infringing at least claims 1, 7, 9, 14, 16, and 19 of the ‘586 Patent:

Unlock Apple Watch with iPhone

You can unlock Apple Watch whenever you unlock your iPhone.

1. Open the Settings app ⓘ on your Apple Watch.
2. Tap Passcode, then turn on Unlock with iPhone.

You can also open the Apple Watch app on your iPhone, tap My Watch, tap Passcode, then turn on Unlock with iPhone.

Your iPhone must be within normal Bluetooth range (about 33 feet or 10 meters) of your Apple Watch to unlock it.

 **Tip:** Your Apple Watch passcode can be different from your iPhone passcode—in fact, it's better to use different passcodes.

See <https://support.apple.com/guide/watch/unlock-apple-watch-apd0e1e73b6f/watchos>

About Activation Lock on your Apple Watch

Find My iPhone includes a feature called Activation Lock that's designed to prevent anyone else from using your Apple Watch if it's ever lost or stolen.

Find My iPhone and Activation Lock for your Apple Watch require watchOS 2 or later, and they turn on automatically when you [set up Find My iPhone](#) on your paired iPhone. With Activation Lock, your Apple ID and password are required before anyone can:

- Unpair your Apple Watch from your iPhone.
- Pair and use your Apple Watch with a new iPhone.
- Turn off Find My iPhone on your device.

This can help you keep your device secure, even if it's in the wrong hands, and can improve your chances of recovering it. Even if you erase your device remotely, Activation Lock can continue to deter anyone from reactivating your device without your permission. All you need to do is keep Find My iPhone turned on, and remember your Apple ID and password.

Check to see if Activation Lock is on

Follow these steps on your paired iPhone to see if Activation Lock is turned on:

1. Open the Apple Watch app on your iPhone.
2. Tap the My Watch tab, then tap your watch name at the top of the screen.
3. Tap ⓘ.

If you see Find My Apple Watch, then Activation Lock is on.



See <https://support.apple.com/en-us/HT205009>

140. The foregoing features and capabilities of the iPhone XS, and Apple's description and/or demonstration thereof, including in user manuals and advertising, reflect Apple's direct infringement by satisfying every element of at least claims 1, 7, 9, 14, 16, and 19 of the '586 Patent, under 35 U.S.C. § 271(a).

141. On information and belief, Apple further infringes the '586 Patent through additional products utilizing the same or reasonably similar functionalities as described above

with respect to the iPhone XS (collectively, “the ’586 Accused Products”). The ’586 Accused Products include each of the Apple iPhones (*e.g.*, iPhone XS (model no. A1920), iPhone XS Max (model no. A1921), iPhone XR (model no. A1984), iPhone X (model nos. A1865 and A1901), iPhone 8 Plus (model nos. A1864 and A1897), iPhone 8 (model nos. A1863 and A1905), iPhone 7 Plus (model nos. A1661 and A1784), and iPhone 7 (model nos. A1660 and A1778)). For example, each of these products also include a transceiver for short distance transmission and an Apple Watch application to pair with and unlock an Apple Watch as advertised on Apple’s website. *See* <https://support.apple.com/en-us/HT205009> or <https://support.apple.com/guide/watch/unlock-apple-watch-apd0e1e73b6f/watchos>. Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the ’586 Accused Products are identified to describe Apple’s infringement and in no way limit the discovery and infringement allegations against Apple concerning other devices that incorporate the same or reasonably similar functionalities.

142. Apple has indirectly infringed at least claims 1, 7, 9, 14, 16, and 19 of the ’586 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the ’586 Accused Products. Apple’s customers who purchase devices and components thereof and operate such devices and components in accordance with Apple’s instructions directly infringe one or more claims of the ’586 Patent in violation of 35 U.S.C. § 271. Apple instructs its customers through at least user guides or websites, such as those located at: https://support.apple.com/en_US/manuals or <https://support.apple.com/en-us/HT205009> or <https://support.apple.com/guide/watch/unlock-apple-watch-apd0e1e73b6f/watchos>.

[apple-watch-apd0e1e73b6f/watchos](#). Apple is thereby liable for infringement of the '586 Patent pursuant to 35 U.S.C. § 271 (b).

143. Apple has indirectly infringed at least claims 1, 7, 9, 14, 16, and 19 of the '586 Patent, by, among other things, contributing to the direct infringement of others, including customers of the '586 Accused Products by making, offering to sell, or selling, in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '586 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

144. For example, the '586 Accused Products include a transceiver and/or Apple Watch application. These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, such components are a material part of the invention and upon information and belief are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Apple is liable for infringement of the '586 Patent pursuant to 35 U.S.C. § 271(c).

145. Apple has been on notice of the '586 Patent since, at least, October 9, 2018. By the time of trial, Apple will thus have known and intended (since receiving such notice), that its continued actions would actively induce and contribute to actual infringement of at least claims 1, 7, 9, 14, 16, and 19 of the '586 Patent.

146. Apple undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the '586 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since, at least October 9, 2018, Apple has been

aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the '586 Patent, and that the '586 Patent is valid. On information and belief, Apple could not reasonably, subjectively believe that its actions do not constitute infringement of the '586 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Apple has continued its infringing activities. As such, Apple willfully infringes the '586 Patent.

147. Maxell has been damaged by Apple's infringement of the '586 Patent.

COUNT 10 - INFRINGEMENT OF U.S. PATENT NO. 6,430,498

148. Maxell incorporates paragraphs 1-147 above by reference.

149. U.S. Patent No. 6,430,498 (the “498 Patent,” attached hereto at Exhibit 10) duly issued on August 6, 2002 and is entitled *Portable terminal with the function of walking navigation.*

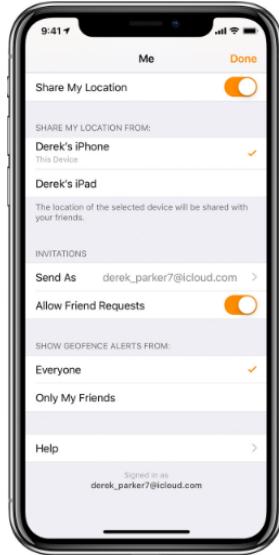
150. Maxell is the owner by assignment of the '498 Patent and possesses all rights under the '498 Patent, including the exclusive right to recover for past and future infringement.

151. The '498 Patent is the parent of the '317 Patent and the '999 Patent, and like claims of the '317 Patent and '999 Patent, claims of the '498 Patent are also directed to a specific novel and non-obvious portable terminal that includes specific functionality of providing guidance for walking navigation and further receives location information from a “partner's portable terminal” ('498 Patent, 12:6-8), thus specifically claiming a portable terminal that can receive a location from another portable terminal and providing in real-time route guidance information to a pedestrian so that the pedestrian can walk to the location of the other portable terminal after receiving the location.

152. Further, the patentability of the '498 Patent was challenged in IPR2019-00071, wherein the Patent Trial and Appeal Board was asked to consider the teachings of prior art (*e.g.*, U.S. Patent Nos. 6,031,999, 5,560,022, 6,345,180, 6,360,327, and Advanced Configuration and Power Interface Specification) in a challenge to the validity of claims 1-13. In response, the Patent Trial and Appeal Board denied the petition, finding that “the Petitioner has not established a reasonable likelihood of prevailing against any claim challenged in the Petition.”

153. Apple has directly infringed one or more claims of the '498 Patent in this District and elsewhere in Texas, including at least claims 1, 3, 4, 10, and 13 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale and/or selling its telecommunications technology, including by way of example a product known as the iPhone XS.

154. The iPhone XS includes a screen for displaying information, at least a GPS chipset/cellular chipset/Wi-Fi chipset/iBeacon/compass/gyroscope for providing location and/or orientation information, “Maps” and “Find My Friends” software that allows users to access location information including the present location of the device and orientation of the device and use such information to provide walking navigation information and/or share location including providing a direction and distance of a destination from a present place by using a line that is distinguished from a starting point and an ending point of the route. The iPhone XS further uses location servers to provide walking navigation information, route information, and/or to provide its position to additional devices in order to allow users to walk to a location of a partner. For example, the following excerpts from Apple’s websites provide non-limiting examples of the iPhone XS infringing at least claims 1, 3, 4, 10, and 13 of the '498 Patent:



Use Find My Friends on multiple devices

You can use Find My Friends on any iPhone, iPad, iPod touch, or Apple Watch that you own. However, only one iOS device can send your location to your followers. You can choose which one to use in Find My Friends:

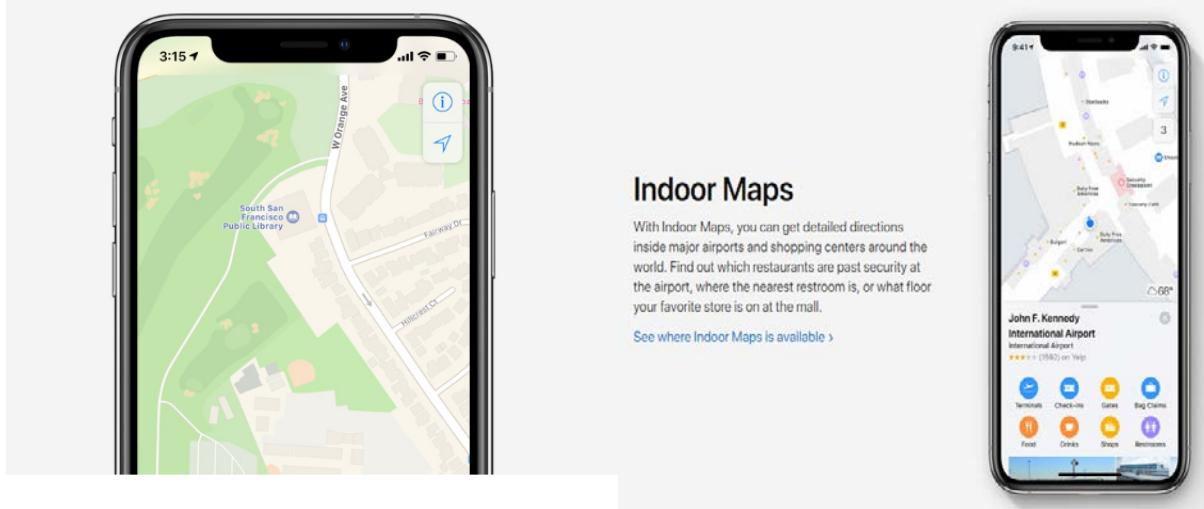
- On your iPhone or iPod touch, tap Me, then tap a device under Share My Location From.
- On your iPad, tap List > Me > Info, then tap a device under Share My Location From.

This choice only appears when you're currently signed in to Find My Friends on multiple devices.

See <https://support.apple.com/en-us/HT201493>

A new foundation for Maps.

Maps is being rebuilt from the ground up to better reflect the world around you. The new underlying map uses Apple data and features enhanced geographic context like **pedestrian paths** and parks, more detailed building outlines and parking lots, better road network coverage, and more. You'll also be able to get where you're going with improved routes, whether you're on the road or on foot. The new Maps is now available in Northern California and is coming soon to the rest of the United States.



See <https://www.apple.com/ios/maps/>

155. The foregoing features and capabilities of the iPhone XS, and Apple's description and/or demonstration thereof, including in user manuals and advertising, reflect Apple's direct

infringement by satisfying every element of at least claims 1, 3, 4, 10, and 13 of the '498 Patent, under 35 U.S.C. § 271(a).

156. On information and belief, Apple further infringes the '498 Patent through additional products utilizing the same or reasonably similar functionalities as described above with respect to the iPhone XS (collectively, "the '498 Accused Products"). The '498 Accused Products include all iOS devices including "Maps" and/or "Find My Friends" applications, for example, Apple iPhones (*e.g.*, iPhone XS (model no. A1920), iPhone XS Max (model no. A1921), iPhone XR (model no. A1984), iPhone X (model nos. A1865 and A1901), iPhone 8 Plus (model nos. A1864 and A1897), iPhone 8 (model nos. A1863 and A1905), iPhone 7 Plus (model nos. A1661 and A1784), iPhone 7 (model nos. A1660 and A1778), iPhone 6s Plus (model nos. A1634 and A1687), iPhone 6s (model nos. A1633 and A1688), iPhone 6 Plus (model nos. A1522 and A1524), iPhone 6 (model nos. A1549 and A1586), iPhone SE (model nos. A1723 and A1662), iPhone 5s (model nos. A1453 and A1533), and iPhone 5c (model nos. A1456 and A1532)) and Apple iPads with cellular functionality and/or Apple iPads with Wi-Fi and Indoor Maps (*e.g.*, iPad Air (model nos. A1474 and A1475), iPad mini 2 (model nos. A1489 and A1490), iPad Air 2 (model nos. A1566 and A1567), iPad mini 3 (model nos. A1599 and A1600), iPad mini 4 (model nos. A1538 and A1550), iPad Pro (10.5") (model nos. A1701 and A1709), iPad Pro (12.9") (model nos. A1584 and A1652), iPad Pro (9.7") (model nos. A1673, A1674, and A1675), iPad Pro (11") (model nos. A1980 and A2013), iPad (5th generation) (model nos. A1822 and A1823), iPad (6th generation) (model nos. A1893 and A1954), iPad Pro (12.9" 2nd generation) (model nos. A1670 and A1671), and iPad Pro (12.9" 3rd generation) (model nos. A1876, A2014, and A1895)). For example, each of these products also include a "Maps" application, a "Find My Friends" application, and/or "Location" services as advertised on

Apple's website. Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the '498 Accused Products are identified to describe Apple's infringement and in no way limit the discovery and infringement allegations against Apple concerning other devices that incorporate the same or reasonably similar functionalities.

157. Apple has indirectly infringed at least claims 1, 3, 4, 10, and 13 of the '498 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the '498 Accused Products. Apple's customers who purchase devices and components thereof and operate such devices and components in accordance with Apple's instructions directly infringe one or more claims of the '498 Patent in violation of 35 U.S.C. § 271. Apple instructs its customers through at least user guides or websites, such as those located at: https://support.apple.com/en_US/manuals or <https://www.apple.com/ios/maps/> or <https://support.apple.com/en-us/HT201493>. Apple is thereby liable for infringement of the '498 Patent pursuant to 35 U.S.C. § 271(b).

158. Apple has indirectly infringed at least claims 1, 3, 4, 10, and 13 of the '498 Patent, by, among other things, contributing to the direct infringement of others, including customers of the '498 Accused Products by making, offering to sell, or selling, in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '498 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

159. For example, the '498 Accused Products include hardware (*e.g.*, GPS chip, cellular chip, Wi-Fi chip, gyroscope, compass, A12 processor) and/or software (*e.g.*, "Maps" or "Find My Friends"). These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, such components are a material part of the invention and upon information and belief are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Apple is liable for infringement of the '498 Patent pursuant to 35 U.S.C. § 271(c).

160. Apple has been on notice of the '498 Patent since, at least, June 25, 2013. By the time of trial, Apple will thus have known and intended (since receiving such notice), that its continued actions would actively induce and contribute to actual infringement of at least claims 1, 3, 4, 10, and 13 of the '498 Patent.

161. Apple undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the '498 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since, at least June 25, 2013, Apple has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the '498 Patent, and that the '498 Patent is valid. On information and belief, Apple could not reasonably, subjectively believe that its actions do not constitute infringement of the '498 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Apple has continued its infringing activities. As such, Apple willfully infringes the '498 Patent.

162. Maxell has been damaged by Apple's infringement of the '498 Patent.

PRAYER FOR RELIEF

WHEREFORE, Maxell prays for relief as follows:

163. A judgment declaring that Apple has infringed and is infringing one or more claims of '317, '999, '493, '438, '193, '991, '306, '794, '586, and '498 Patents;

164. A judgment awarding Maxell compensatory damages as a result of Apple's infringement of one or more claims of the '317, '999, '493, '438, '193, '991, '306, '794, '586, and '498 Patents, together with interest and costs, consistent with lost profits and in no event less than a reasonable royalty;

165. A judgment awarding Maxell treble damages and pre-judgment interest under 35 U.S.C. § 284 as a result of Apple's willful and deliberate infringement of one or more claims of the '317, '999, '493, '438, '193, '991, '306, '794, '586, and '498 Patents;

166. A judgment declaring that this case is exceptional and awarding Maxell its expenses, costs, and attorneys' fees in accordance with 35 U.S.C. §§ 284 and 285 and Rule 54(d) of the Federal Rules of Civil Procedure;

167. A grant of preliminary and permanent injunctions enjoining Defendant from further acts of infringement of one or more claims of the '317, '999, '493, '438, '193, '991, '306, '794, '586, and '498 Patents; and

168. Such other and further relief as the Court deems just and proper.

JURY TRIAL DEMANDED

Maxell hereby demands a trial by jury.

Dated: March 15, 2019

By: /s/ Geoffrey Culbertson

Geoff Culbertson

Kelly Tidwell

Patton, Tidwell & Culbertson, LLP

2800 Texas Boulevard (75503)

Post Office Box 5398

Texarkana, TX 75505-5398
Telephone: (903) 792-7080
Facsimile: (903) 792-8233
gpc@texarkanalaaw.com
kbt@texarkanalaaw.com

Jamie B. Beaber
Alan M. Grimaldi
Kfir B. Levy
James A. Fussell, III
Baldine B. Paul
Tiffany A. Miller
Saqib Siddiqui
Bryan C. Nese
Alison T. Gelsleichter
MAYER BROWN LLP
1999 K Street, NW
Washington, DC 20006
Telephone: (202) 263-3000
Facsimile: (202) 263-3300
jbeaber@mayerbrown.com
agrimaldi@mayerbrown.com
klevy@mayerbrown.com
jfussell@mayerbrown.com
bpaul@mayerbrown.com
tmiller@mayerbrown.com
ssiddiqui@mayerbrown.com
bnese@mayerbrown.com
agelsleichter@mayerbrown.com

Robert G. Pluta
Amanda Streff Bonner
MAYER BROWN LLP
71 S. Wacker Drive
Chicago, IL 60606
(312) 782-0600
rpluta@mayerbrown.com
asbonner@mayerbrown.com

Counsel for Plaintiff Maxell, Ltd.